RHS Technical Services, Inc.

270 N.E. 123rd Street
North Miami, Florida 33161
305-688-6022 rhstech@gate.net

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Federal Communications Commission
Washington, D.C.

Reference: FCC Proceeding No. 98-153
Ground Penetrating Radar/ Subsurface Interface Radar

Gentlemen:

I am writing to comment on the proposed rules governing Ultrawideband transmitters, as outlined in FCC Proceeding 98-153.

I am a professional engineer and geologist who has owned and operated three generations of ground penetrating radar units over the past 12 years, all manufactured by Geophysical Survey Systems, Inc. of North Salem, New Hampshire. During this time, I have invested many long hours in the field and on the computer, as well as over $ 100,000 in equipment. In return, I have gained significant expertise in this technology. Until recently, we have primarily utilized the equipment for locating underground storage tanks, piping utilities and geological features.

The recent development of the 1.5 gigahertz antenna has enabled me to conduct subsurface interface radar surveys to locate reinforcing steel and post tensioning cables in concrete slabs safely, without radiation exposure to the surrounding areas which would otherwise occur if x-ray investigation were conducted. This technology has produced a significant increase in my business and has enabled me to develop subsurface interface radar services as the major service of my business. The promulgation of proceeding 98-153 would render this technology and specifically, the 1.5 gigahertz antenna, illegal. Aside from seriously hampering the rapid, non-destructive survey of concrete slabs, and rendering the 1.5 gigahertz antenna illegal, my business development would be seriously affected.

Some adverse situations avoided by my ground penetrating radar/ subsurface interface radar work include the following:

> Locating and identifying a fiber optic cable at the Pentagon, which would have been cut during the excavation of an underground storage tank (our primary survey objective). No other equipment would have detected this cable.
>
> Locating and identifying a Federal Aviation Administration communications cable at Miami International Airport, prior to construction of a new building.

Locating post-tensioning cables in the taxiway (constructed on piles over water) at LaGuardia Airport so that the contractor could perform reinforcement work to strengthen the slab without damaging the cables.

Locating sinkholes to prevent the collapse of residences, roads and, in two instances, airport runways.

As I understand the proposed rules, the justification for banning this equipment is that it could interfere with other wireless communications equipment. However, the electromagnetic signals generated by the ground penetrating radar dissipate within a few feet from the antenna when directed into a concrete slab or the ground. The 1.5 gigahertz antenna has a penetration limit of only two feet, and would cause no significant interference. Actually, it would cause less interference than the building itself.

We have never had any complaints about interference caused by our equipment. The Federal Aviation Administration has authorized the use of ground penetrating radar technology to locate their operating underground conduits at Miami International Airport.

It is my understanding that under the new rules, construction companies would be permitted to utilize ground penetrating radar. However, as an engineering business, I would not be permitted to utilize equipment I have owned and operated for over 12 years. Additionally, the most useful equipment would be banned. Since the U.S. manufacturing companies would likely be forced out of business if they remain here, their manufacturing and development operations may move out of the U.S.

On behalf of myself and other owner/operators of ground penetrating radar equipment, I respectfully request an exemption without additional licensing for this equipment so that we can continue to offer this rapid, non-destructive technology to our clients and customers and not interfere with any other broadband equipment development or usage.

We appreciate your consideration of our comments. I can be contacted at 305-688-6022 or at rhstech@gate.net to further discuss this situation.

Respectfully Submitted,
RHS Technical Services, Inc.

Robert Schuler

Robert H. Schuler, P.E., P.G., President

Professional Engineer registered in Florida, Alaska & Kentucky
Professional Geologist registered in Florida
Florida Special (Threshold) Inspector (Structural)
Asbestos Consultant registered in Florida